

REMARKS

Claims 1, 3, 5, 7, 9, 11, and 13-19 are all of the claims presently pending in the application. Applicants have amended claims 1, 3, 5, 7, 9, and 11 to define the claimed invention more particularly.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 3, 5, 7, 9, 11, and 13-19 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Claims 1, 3, 5, 7, 9, 11, and 13-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eberle, et al. (U.S Publication No. 2001/0015245; hereinafter “Eberle”). Claims 1, 3, 9, 11, and 14-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshinaga, et al. (U.S. Patent No. 6,632,296; hereinafter “Yoshinaga”). Claims 1, 3, 9, 11, 13, 14, and 17-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ochi, et al. (U.S. Patent No. 6,602,359; hereinafter “Ochi”). Claims 1, 2, 5, 7, 9, 11, and 13-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kanisawa, et al. (U.S. Patent No. 6,547,890; hereinafter “Kanisawa”).

Applicants respectfully traverse these rejections in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention of exemplary claim 1 provides a steel for use in a high strength pinion shift made by a method including hot rolling the steel at a temperature of 700°C to

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850°C under a draft ratio at an area reduction of 10% or more and high frequency hardening
the steel (e.g., see Application at Table 1). Accordingly, the claimed invention provides a steel for use in a high strength pinion shaft which can provide excellent effect of less occurrence of peeling upon hobbing, having higher surface hardness and impact value and torsional strength after high frequency hardening, and having less heat treatment strains (see Application at page 5, lines 5-12).

II. THE INDEFINITESS REJECTION

The Examiner has rejected claims under 35 U.S.C. 112 as allegedly being indefinite. Specifically, the Examiner alleges that the phrase "...-0.75 x Cr" in claims 1, 5, and 9, and the addition of Al in claims 3, 7, and 11, contradict the phrase "wherein the steel is devoid of Cr, Cu, Ni, and Al", recited in claims 1, 5, and 9.

Applicants have removed the allegedly contradictory phrases from claims 1, 3, 5, 7, 9, and 11.

Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

III. THE PRIOR ART REFERENCES

A. The Eberle, Yoshinaga, and Kanisawa References

The Examiner alleges that the claimed invention of claims 1, 3, 5, 7, 9, and 11 would have been obvious in view of Eberle. Furthermore, the Examiner alleges that the claimed invention of claims 1, 3, 9, 11, and 14-19 would have been obvious in view of Yoshinaga. Finally, the Examiner alleges that the claimed invention of claims 1, 2, 5, 7, 9, 11, and 13-19

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would have been obvious in view of Kanisawa. Applicants submit, however, that the applied references do not teach or suggest each and every feature of the claimed invention.

That is, neither Eberle nor Yoshinaga nor Kanisawa teaches or suggests, “*hot rolling the steel at a temperature of 700°C to 850°C under a draft ratio at an area reduction of 10% or more; and high frequency hardening the steel*”, as recited in exemplary claim 1, and similarly recited in exemplary claims 5 and 9.

According to the claimed invention, the steel before being subjected to the high frequency hardening has a hardness (24-30 HRC) suitable for being worked by a machining tool to manufacture a pinion shaft. That is, since the hardness of the steel is not excessively high, the machining tool does not bear the excess load and thus the tool life is ensured and further since the hardness of the steel is not excessively low, the sufficient strength of the manufactured pinion shaft is ensured. Further, since pearlite block size of the steel is 100 µm or less as a circle-equivalent diameter, the occurrence of peeling on the steel at the time of gear cutting by a hob, etc., can be suppressed.

Furthermore, when the steel is subjected to high frequency hardening, the strength and wear resistance of the pinion shaft can be secured (surface hardness to be 650 HV or more).

Neither Eberle nor Yoshinaga nor Kanisawa teaches or suggests the above feature of the claimed invention and, accordingly, does not provide the above advantages of the claimed invention.

Therefore, Applicants submit that the applied references do not teach or suggest each and every feature of the claimed invention. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

B. The Ochi Reference

The Examiner alleges that the claimed invention of claims 1, 3, 9, 11, 13, 14, and 17-19 would have been obvious in view of Ochi. Applicants submit, however, that Ochi does not teach or suggest each and every feature of the claimed invention.

That is, Ochi does not teach or suggest, "*wherein the steel is devoid of Cr, Cu, Ni and Al*", as recited in exemplary claim 1, and somewhat similarly recited in exemplary claims 5 and 9.

In rejecting the claims over Ochi, the Examiner interpreted the claims based on the Examiner's second analysis (i.e., the inclusion of Al in both the independent and dependent claims) (see Office Action dated June 12, 2008 at pages 3 and 7).

Applicants have amended the claims such that the Examiner's second analysis is no longer appropriate. That is, the claims clearly recite that the steel is devoid of Cr, Cu, Ni, and Al.

Therefore, since Ochi clearly includes Al, as conceded by the Examiner, Ochi clearly fails to teach or suggest each and every feature of the claimed invention. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

IV. FORMAL MATTERS AND CONCLUSION

Applicants have amended the claims in a manner believed fully responsive to the Examiner's objections.

In view of the foregoing, Applicants submit that claims 1, 3, 5, 7, 9, 11, and 13-19, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. Applicants respectfully request the Examiner to

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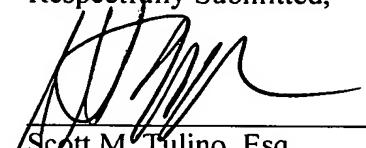
pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, Applicants requests the Examiner to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The undersigned authorizes the Commissioner to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

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Respectfully Submitted,



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